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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/785,316	02/20/2001	Simone Masetti	PETR/SF/5608 US-B	2019

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EXAMINER

BOYD, JENNIFER A

ART UNIT	PAPER NUMBER
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1771

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DATE MAILED: 12/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/785,316

Examiner

Jennifer A Boyd

FILE

Applicant(s)

MASETTI, SIMONE

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Specification

1. Claims 1 – 22 are objected to because of the following informalities: Please change the phrase “characterized in that” to “wherein”. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 3, 7 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claims 3 and 7, a broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex*

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parte Hasche, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 3 recites the broad recitation "2:1 – 36:1", and the claim also recites "7:1 to 11:1" which is the narrower statement of the range/limitation. Claim 7 recites the broad recitation "less than 1.3 g/cm³", and the claim also recites "around 0.6 g/cm³" which is the narrower statement of the range/limitation.

Claim 20 recites the limitation that the material has "bicomponent fibers or fibers with the lowest melting point". What does the Applicant mean by "lowest melting point"? Does finer denier have a lower melting point than the coarser denier fibers or vice versa? For the purposes of examination, the Examiner will assume that one fiber has a lower melting point than another fiber.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 – 3, 5 – 6, 20 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Brown (US 4,798,850).

As to claims 1 and 22, Brown teaches a filter material, or "non-woven fabric material", comprising a felt of 60% weight of 2.8 decitex (2.52 denier) polypropylene fibers and 40% weight of 3.5 decitex (3.15 denier) modacrylic fibers (Abstract). The fibers hold an electric charge, which is critical in effecting the capture of small dust particles by the material (column 2, lines 16 – 24). The filter material may find application in dust helmets, respirators, suction

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cleaners, air-conditioning systems, disposable filter elements and even as a duster (column 1, lines 1 – 8). The material could be considered a “dry-cleaning material” because it collects the dust by electric charge without requiring the presence of water as required by claim 22.

As to claims 2 and 3, Brown teaches that the cross-sectional area of the polypropylene fibers does not differ from the modacrylic fibers by more than a factor of 3 (column 1, lines 65 – 68 and column 2, lines 1 – 5). Therefore, the denier ratio would be approximately 3:1 which meets the requirement of being at least 2:1.3 as required by claim 2 and within the ratio of 2:1 to 36:1 as required by claim 3.

As to claims 5 and 6, Brown teaches that the ratio of fiber (i), which is preferably a lower denier polypropylene fiber, to fiber (ii), which is a coarser modacrylic fiber, is 30:70 to 80:20 by surface area, more preferably from 40:60 to 70:30 (column 1, lines 60 – 64). The requirements of claim 5 are met because the range meets the limitation of *at least* 3% of its surface has the lower denier polypropylene. The requirements of claim 6 are met because the range meets the limitation of *at least* 50% of its surface has the lower denier polypropylene.

As to claim 9, Brown teaches that the filter material can be made of polypropylene fibers and modacrylic fibers (Abstract).

As to claim 20, Brown teaches that two chemically different fibers are used in the filter material, therefore, one fiber will have a lower melting point than the other fiber.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 10 - 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown (US 4,798,850) in view of Pryne et al. (US 5,874,373).

As to claims 10 - 18, Brown fails to teach that the filter material, or "non-woven fabric material", can be made of polyester fibers.

Pryne et al. teaches an enhanced electret needled filtration media which has a first media layer and a second media layer. The second media layer has two different denier polyester staple fibers which is needled to the first media layer, or "mesh of reinforcing material".

It would have been obvious to one of ordinary skill in the art at the time the invention was made to create the filter material, or "non-woven fabric material", of Brown with polyester fibers as suggested by Pryne motivated by the expectation of having a cost-efficient material with high dimensional stability.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add another layer to a filtration media as suggested by Pryne to the filter material Brown motivated by the desire to have a composite with improved mechanical strength and filtration or "dust collecting" performance (Pryne, Abstract).

As to claim 18, the limitations do not hold any patentable weight because the origin of the 0.14 denier fibers is not relevant to the end product.

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brown (US 4,798,850) in view of Chapman (US 5,419,953).

Brown discloses the claimed invention except for that the filter material, or "non-woven fabric material", has a reinforcing mesh.

Chapman discloses a multiplayer composite filtration media which has a layer of electrostatically charged non-woven material (column 1, lines 62 – 66). Example 6 describes a filter media with a polyester scrim backing (column 6, lines 9 – 15). A scrim is a lightweight open weave fabric which can be considered to a mesh.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a mesh backing layer as suggested by Chapman to the filter material, or "non-woven fabric material", of Brown motivated by the expectation to provide structural rigidity, strength and tear resistance to the filter material (Chapman, column 2, lines 6 – 14).

8. Claims 4, 7 – 8, 10 – 17 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown (US 4,798,850).

Brown discloses the claimed invention except for a fine fiber denier of 1 to 1.5 and coarse fiber denier below 0.5 as required by claim 4; a density of less than 1.3 g/cm^3 as required by claim 7; the capacity to acquire an electric charge of at least 1 Volt as required by claim 8 or charge varying from 1.22 to 3.32 Volts as required by claim 21; a composition of 90% of 1.5 denier, as required by claim 10, or 1 denier, as required by claim 11, polyester fibers, and 10% of 0.14 denier polyester fibers as required by claims 10 and 11; a composition of 80% of 1.5 denier, as required by claim 12, or 1 denier, as required by claim 13, polyester fibers, and 20% of 0.14

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denier polyester fibers as required by claims 12 and 13; a composition of 70% of 1 denier polyester fibers and 30% of 0.14 denier polyester fibers as required by claim 14; a composition of 50% of 1 denier and 50% of 0.14 denier polyester fibers as required by claim 15; a composition of 50% of 1.5 denier, 30% of 1 denier and 20% of 0.14 denier as required by claim 16 and a composition of 50% of 1.5 denier, 30% of 0.8 denier and 20% of 0.14 denier as required by claim 17. It should be noted that the denier, density, level of electric charge and composition are result effective variables. For example, as the denier increases, the material becomes more rigid and strong. As the density increases, the material becomes heavier and thicker. As the level of electric charge increases, the take-up rate of dirt particles increases. As the composition comprises a higher percentage of finer denier fibers, the material becomes more flexible, porous and lightweight. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a filter material as described above, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the denier used in order to have a flexible yet strong material while maximizing its dirt pick-up capabilities.

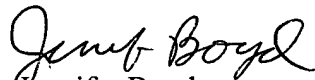
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A Boyd whose telephone number is 703-305-7082. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the

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organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Jennifer Boyd

December 13, 2002